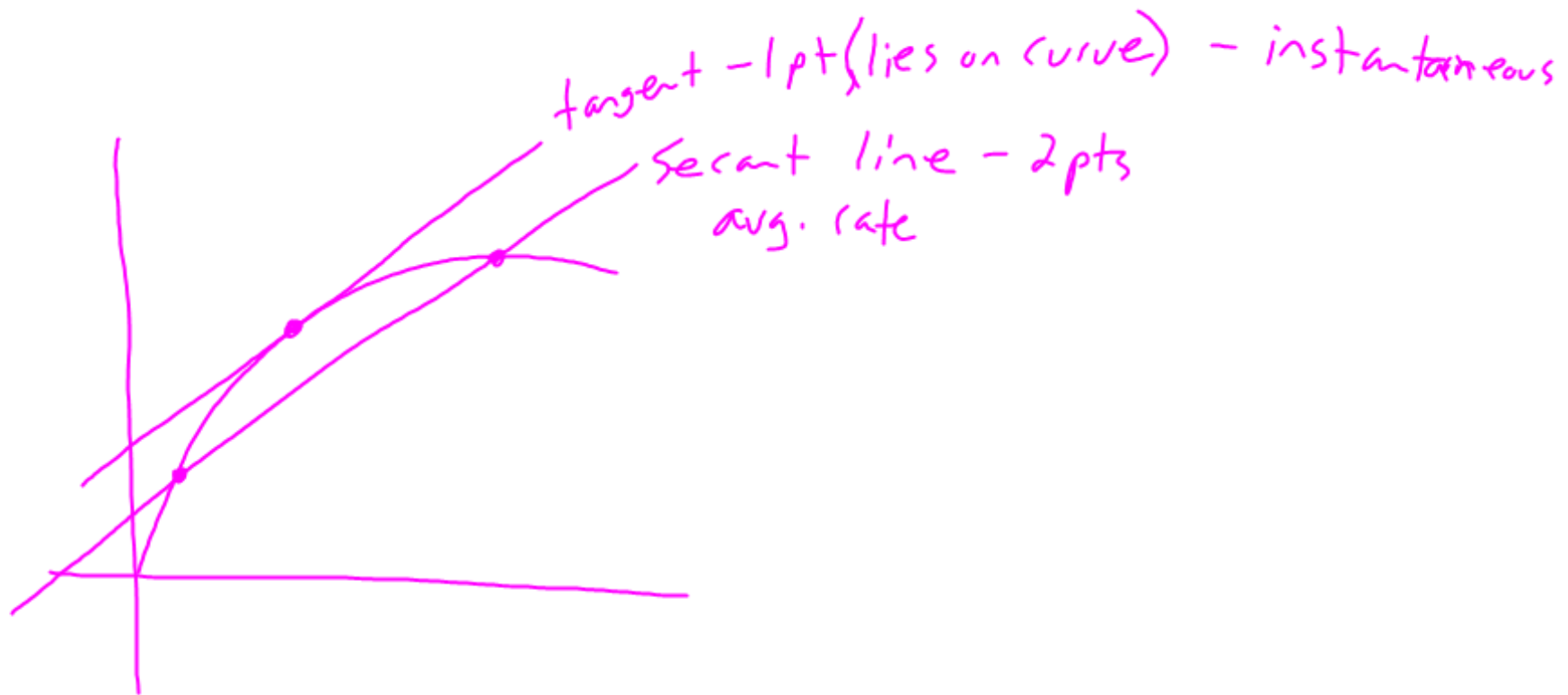


- ① A bicyclist is riding on a path modeled by the function $f(x) = 0.04(8x - x^2)$ where x and $f(x)$ are measured in miles. Find the rate of change of elevation when $x=2$, then verify using the difference quotient.

$$\textcircled{2} \lim_{x \rightarrow 0} \frac{\sqrt{x+1} - 1}{x} \cdot \frac{\sqrt{x+1} + 1}{\sqrt{x+1} + 1} = \frac{x+1 - 1}{x(\sqrt{x+1} + 1)} = \frac{\cancel{x}}{\cancel{x}(\sqrt{x+1} + 1)}$$

$$\lim_{x \rightarrow 2} \frac{x^2 - 3x + 2}{x^2 - 4} \cdot \frac{\cancel{(x+2)}(x-1)}{\cancel{(x-2)}(x+2)} = \frac{1}{\sqrt{x+1} + 1} \text{ at } x=0$$

$$\frac{1}{\sqrt{6+1} + 1} = \boxed{\frac{1}{2}}$$



$$= \dots$$

$$= \dots$$

$$= \dots$$

$$= 0.32 - 0.08x - 0.04h$$

$$\lim_{h \rightarrow 0} (0.32 - 0.08x - 0.04h) = 0.32 - 0.08x$$

$$\begin{aligned} &\text{evaluate at } x=2 \\ &= 0.16 \frac{\text{miles}}{\text{miles}} \end{aligned}$$

Sect- 2.1

#2,4, 19-28(3), 38,47,50,51,54,55, 59-62(2), 64

Read 2.2